

FAS – Office of Global Analysis (OGA)
United States Department of Agriculture (USDA)
International Operational Agriculture Monitoring Program



Week3 – Summary

1. The current production estimate of wheat in Iraq for MY 2007/2008 is 2.2 MMT and for barley is 8 TMT.
2. According to the Joint Agricultural Weather Facility, cumulative precipitation is nearing normal in the most northern rainfed wheat and barley regions of Iraq, thus improving winter crop prospects. However, dry conditions are returning and above normal temperatures in the region may also prevent dormancy in winter grains. Crop calendars for this region assume that planting is near completion (Figure 1).
3. Digital Globe Quickbird imagery provided by NGA was acquired on December 14th, 2007 over AOI #14 near the southern border of At' Tamin and Ninawa provinces (Figure 2). Agricultural analysis performed by EarthMap Solutions on four areas totaling 580 hectare, showed that 80% of sampled fields were composed of bare soil.
4. Archived Quickbird imagery acquired over AOI #14 on October 26th, 2005 was obtained from the NGA Web-based Access and Retrieval Portal (WARP). Although change detection is typically performed using imagery of the approximate date; however, ocular comparisons of the two image dates showed more crop cover in October 2005 (Figure 3). Further analysis showed that precipitation in October 2005 was slightly higher than October 2007, but not significantly (+1 mm). This evidence could imply that start of season crop conditions, and/or irrigation, were more improved in 2005 in comparison to 2007. Furthermore, the 2007 image consistently reveals irrigation canals overgrown with vegetation and a reduced water capacity in comparison to 2005 (Figure 4).
5. A multi-temporal change detection analysis was performed between the two images dating October 26th, 2005 and December 14th, 2007. The 2007 image shows significantly less cropland cover in comparison to 2005. The 2007 image also shows significantly more vegetation grow thin irrigation canals in comparison to 2005, which maybe evidence of reduced maintenance (Figure 5).

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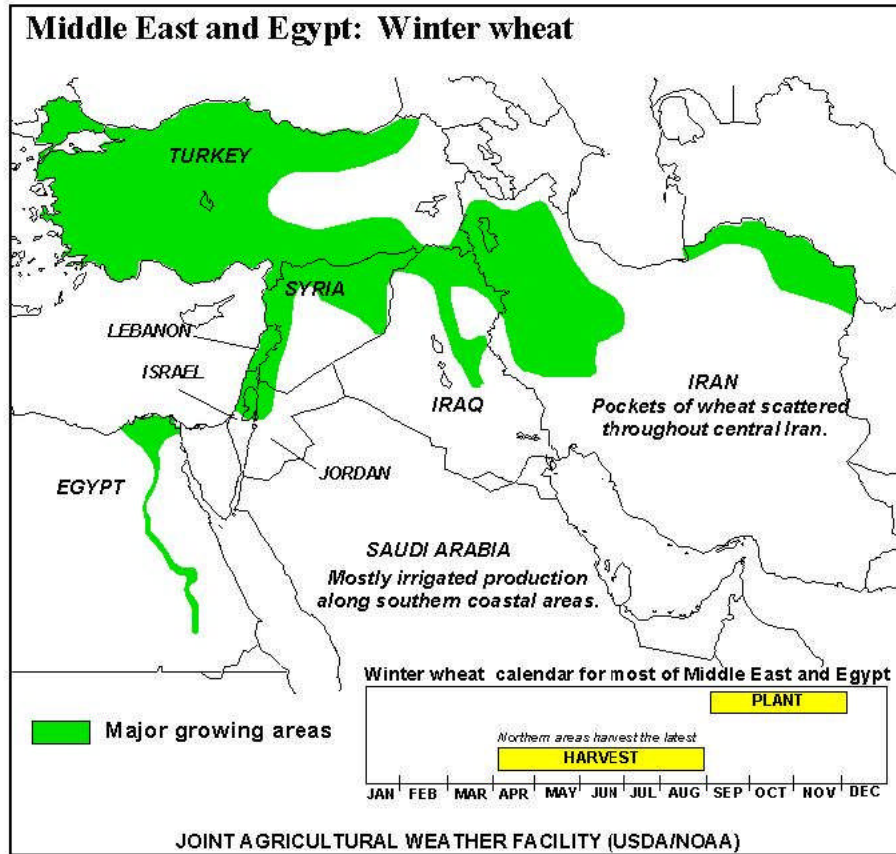


Figure 1: Winter wheat crop calendar for the Middle East. Planting season is nearing completion.

AOI #14, At' Tamin Province, Acquired on December 14th, 2007

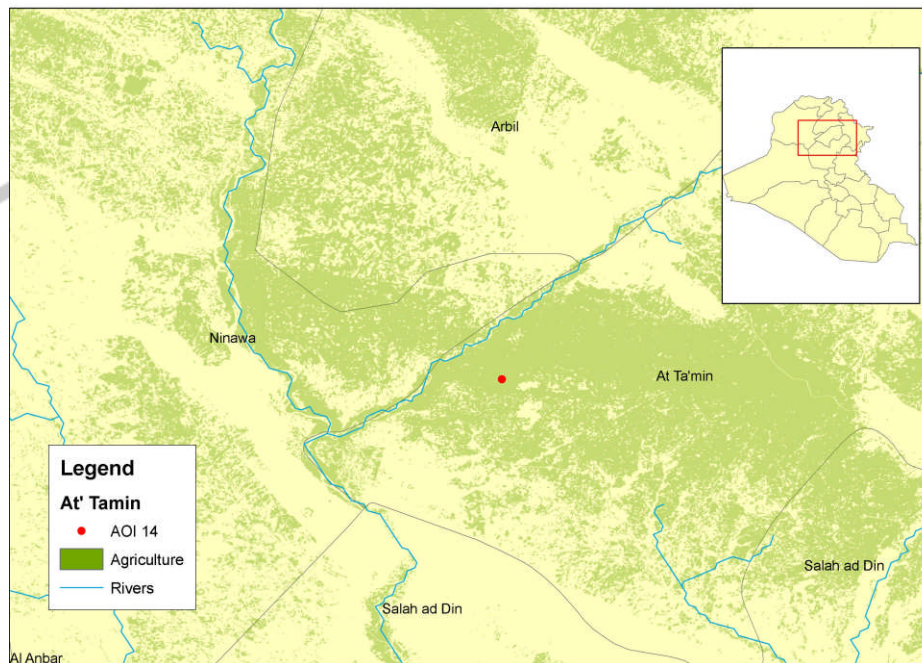


Figure 2: Map of Quickbird imagery acquisition over area of interest #14 (AOI #14)

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Image Comparison of Same Location between October 26th, 2005 and December 14th, 2007

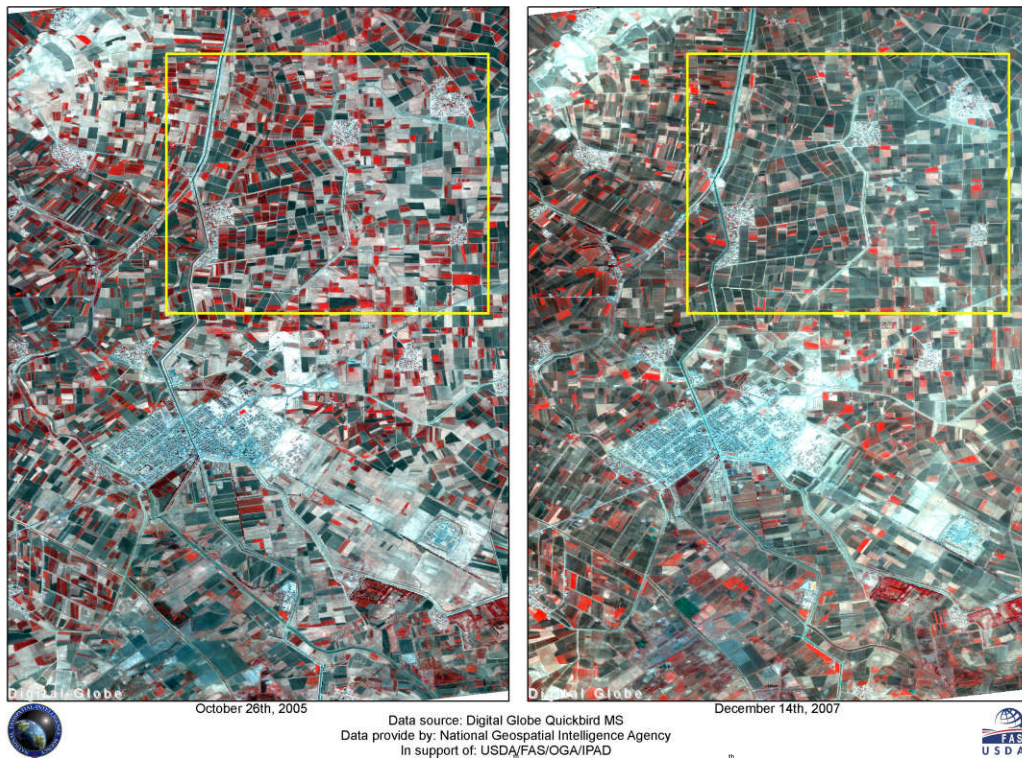


Figure3: Comparison of similar date imagery between October 26 , 2005 and December 14 , 2007 showing areas of difference in cropland cover (yellow highlight). Cropland parcels colored in red represent green vegetation.

Image Comparison of Same Location between October 26th, 2005 and December 14th, 2007

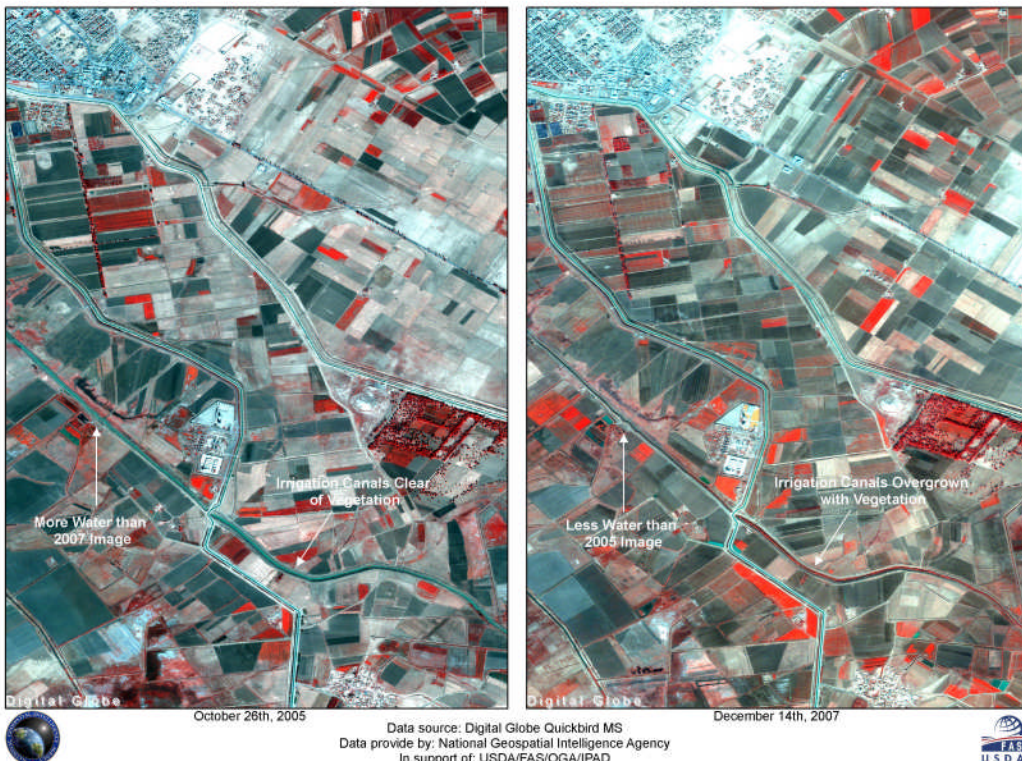


Figure 4: Image comparison between 2005 and 2007 images reveals irrigation canals overgrown with vegetation and decreased water.

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Multi-Temporal Change Analysis between October 26th, 2005 and December 14th, 2007

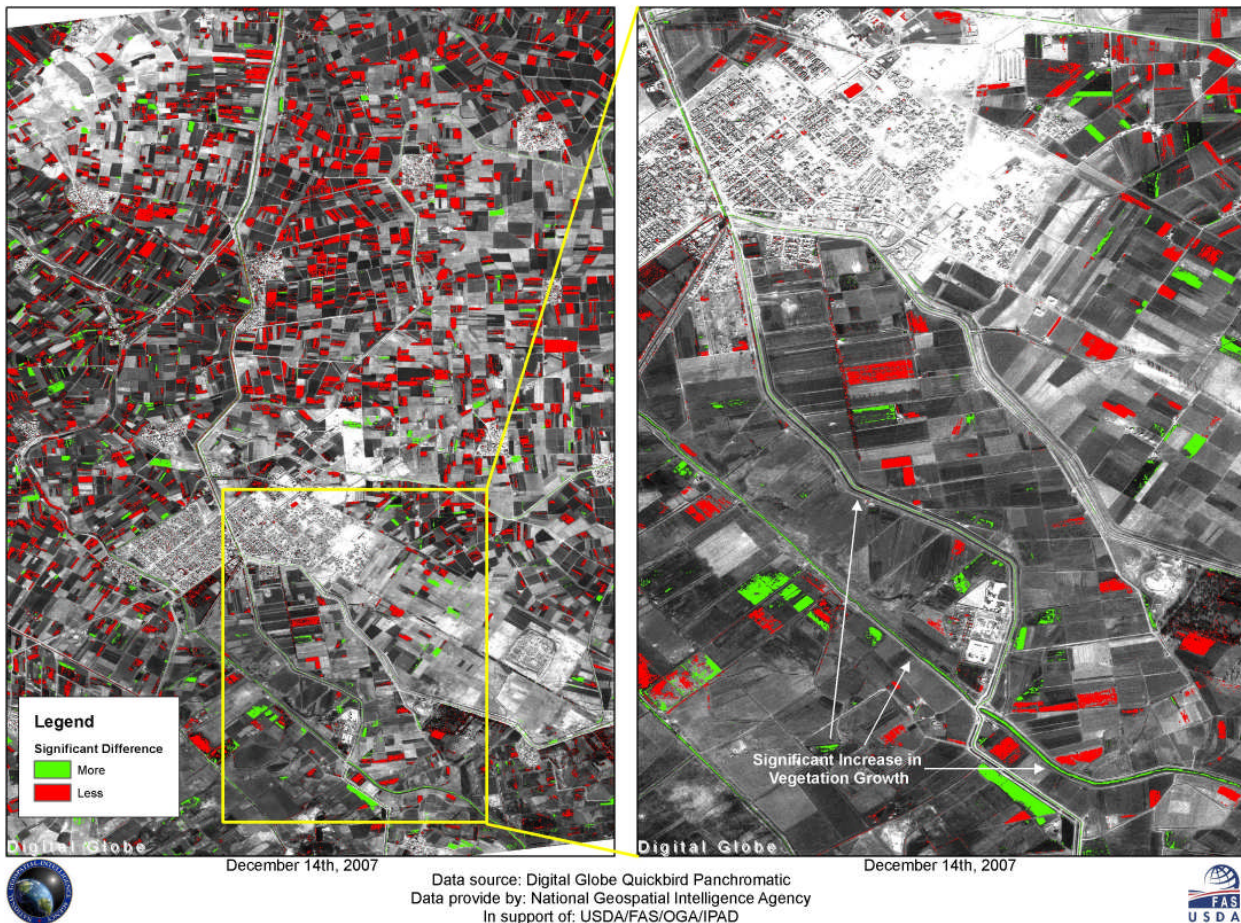


Figure 5: Multi-temporal change detection analysis shows significantly less cropland cover in November 2007 in comparison to October 2005. Analysis also shows significantly more vegetation growth in irrigation canals in comparison to 2005.